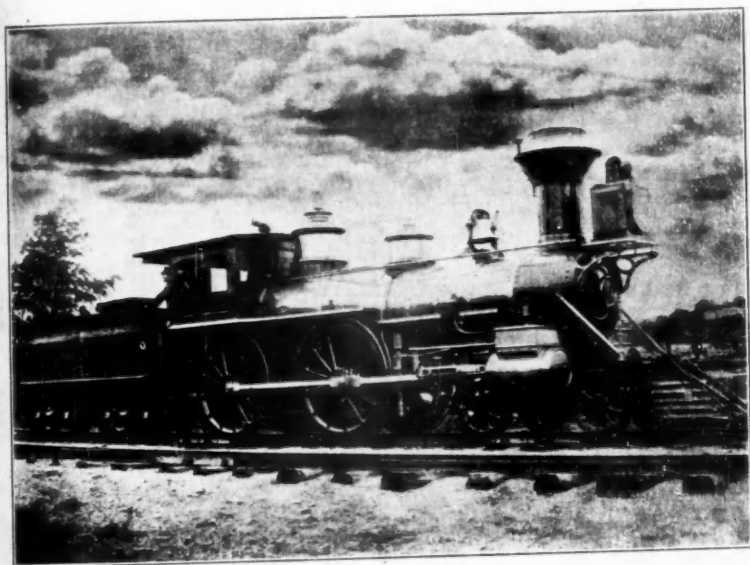
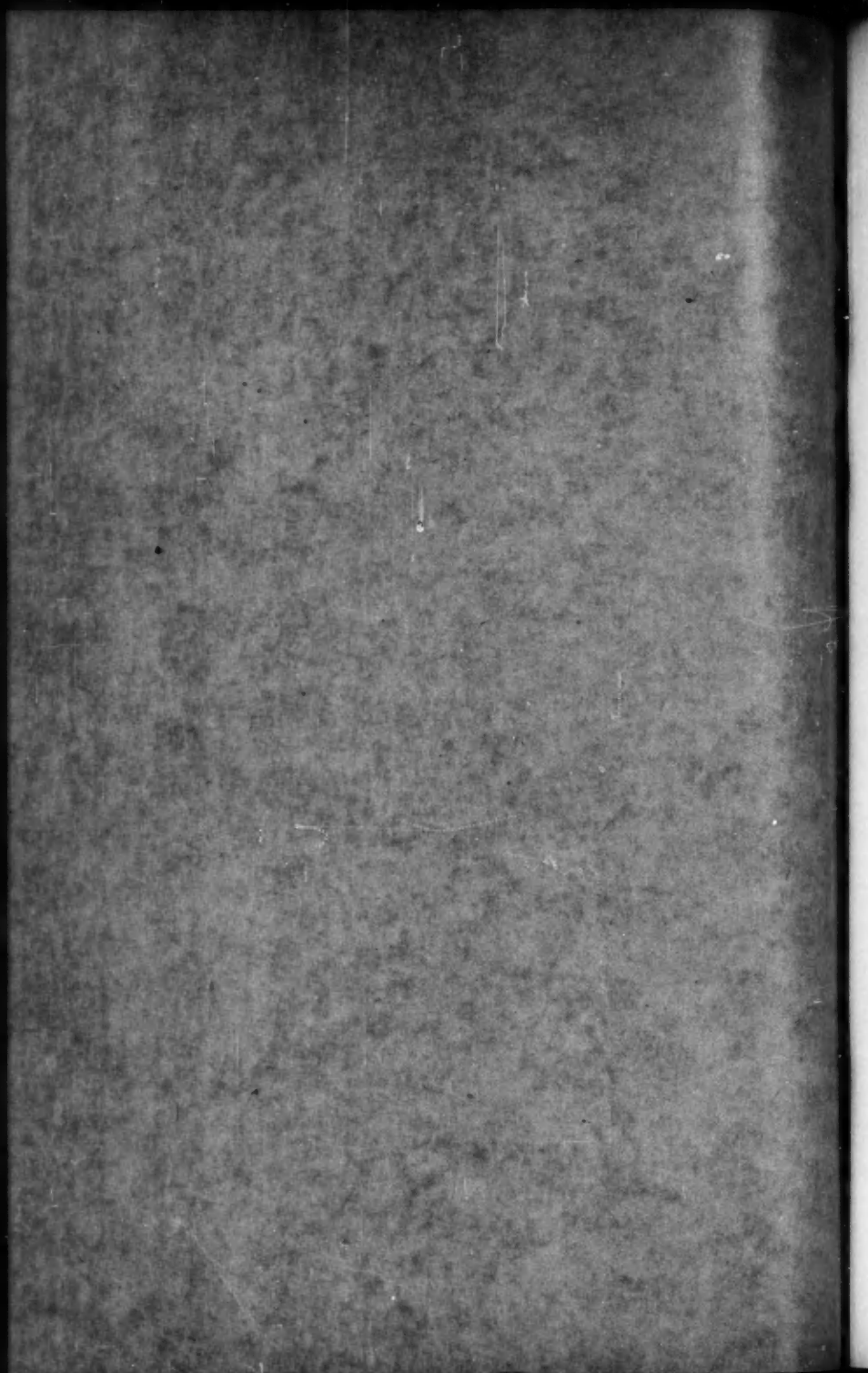


# BULLETIN No. 9



THE RAILWAY AND LOCOMOTIVE  
HISTORICAL SOCIETY



THE RAILWAY  
AND LOCOMOTIVE HISTORICAL  
SOCIETY



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Copies of this bulletin can be procured from Mr. Herbert Fisher.

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Many handsome locomotives were built by a locomotive company in our northeastern state and Mr. Given's contribution on the activities of the Portland Co. is exceedingly interesting. Mr. Given, as a former employee of the Maine Central R. R. has had the opportunity of following these locomotives in service and the older employees of the Maine Central still talk of the Portland engines. To the best of my knowledge, there is one Portland mogul, considerably rebuilt, that is still in service on the M. C. on the Harmony Branch.

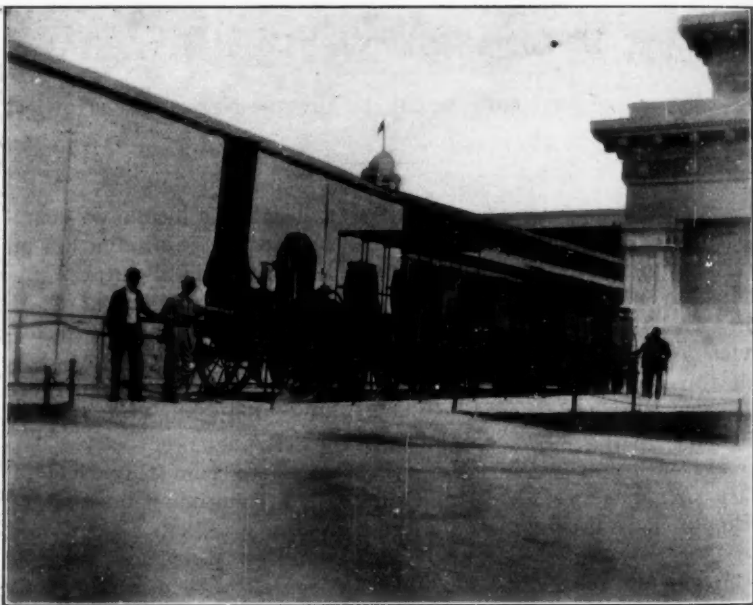
Death has removed another member from this Society. Mr. Alger served his time and was an engineer on the old Boston & Worcester R. R., later Boston & Albany. He went with the Boston & Maine R. R. and a few years ago reached the age limit and was retired. Possessed with a wonderfully accurate memory for old locomotives and a fund of information of locomotives and men of both roads, his passing will be felt more keenly as the years come on.

The committee wishes to call attention to the members whose files of bulletins are not complete. The supply of the first two issues is completely exhausted. We can furnish you from No. 3 Bulletin up to the present issue, but our other earlier issues is rapidly disappearing. Those of you who de-

sire to get these issues now, we would suggest that you do so without delay. At some future date, we may be able to issue another edition of our first two bulletins.

### **Famous Locomotives Now On Exhibition.**

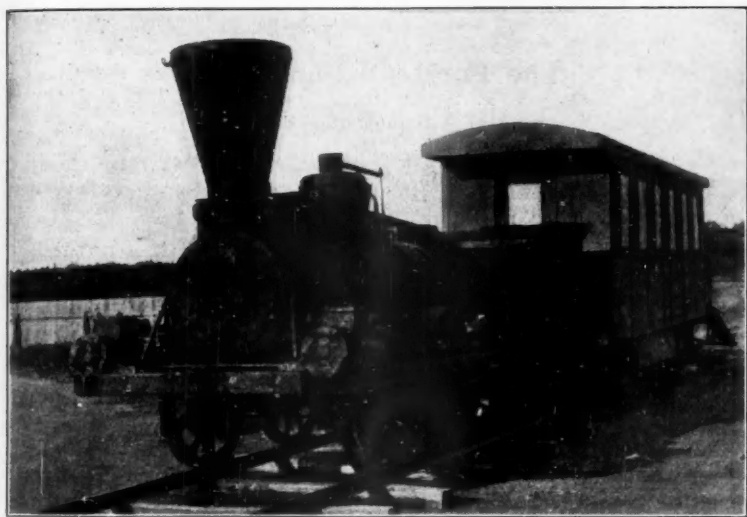
Of the many locomotives now on permanent exhibition, perhaps the most striking is the old "De Witt Clinton" and train of old coaches that now stand in the balcony of the Waiting Room of the Grand Central Terminal, New York. The



The "De Witt Clinton" at the World's Fair, Chicago, 1892.

"De Witt Clinton" was built at the West Point Foundry, New York City in 1831 for the Mohawk & Hudson R. R. It was designed by Mr. John B. Jervis, engineer of the railroad company and was used to open the road on that historic day, August 9, 1831. While the appearance of this engine is well known the following data may be of interest. The cylinders

were  $5\frac{1}{2} \times 16$ " set at the sides of the firebox at an angle of about  $30^\circ$ . They transmitted the power to inside cranked axles on the first pair of wheels. The wheels were connected outside by rods in the form of double trusses. The drivers were  $4\frac{1}{2}$  feet in diameter, cast iron hubs, spokes turned and polished and wrought iron tires. The boiler was horizontal with a dome almost as large as the boiler. There were 30 copper tubes in the boiler,  $2\frac{1}{2}$ " diameter, 6 feet long. Pumps operated vertically by a bell crank fed the boiler with water. The fire box had two



The old "Lion" at Orono, Maine.

doors, one above the other. Fifty pounds of steam pressure was carried and the engine, when in good working order would handle five of the small cars then used at about 30 miles an hour. With the boiler full of water and the firebox full of wood, this engine weighed about four tons. The engine as it appears today has much of the original construction left on it, what parts were lacking have been replaced. The photograph used with this sketch was taken when the engine and train were at the World's Fair in Chicago.

There is an old locomotive and coach that stands on the campus of the University of Maine at Orono. This engine was

built by Holmes Hinkley, founder of the Hinkley Locomotive Works of Boston, on May 4th, 1846. This engine was originally built for the Palmer & Machiasport R. R. which was a logging road about eighteen miles long. About twenty years ago operations of this road were abandoned and the locomotives, of which the old "Lion" was one, together with the rails, were sold for junk. The "Lion" was preserved however and although rebuilt, presents quite a curiosity. Other than the engine weighed about nine tons, further description of this locomotive is lacking.

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## **The Portland Company.**

By CHAS. S. GIVEN.

The Portland Company was organized at Portland, Maine, in 1846, primarily to build locomotives for the Atlantic & St. Lawrence Ry. and many of its stockholders were also stockholders in the A. & St. L. which was then under construction.

Its directors were John A. Poor, Pres.; Septimus Norris, Chief Engineer; Horace Felton, Supt.; A. W. H. Clapp; George Warren; John Fox and James C. Churchill. Woodbury Stover was clerk and treasurer.

These men organized one of the old fashioned corporations, in which the capital in money was small, and in brains and capacity for work on the part of the organizers was large.

Although organized to build railroad locomotives, the first piece of machinery turned out by the company was a marine engine for the ferryboat "Elizabeth", plying between Portland and South Portland. It did excellent work for many years.

They built their first locomotive in 1848 for the Portland, Saco & Portsmouth R. R. now a part of the Boston & Maine's Eastern Division. The second for the Atlantic & St. Lawrence (now Grand Trunk) named "Montreal".

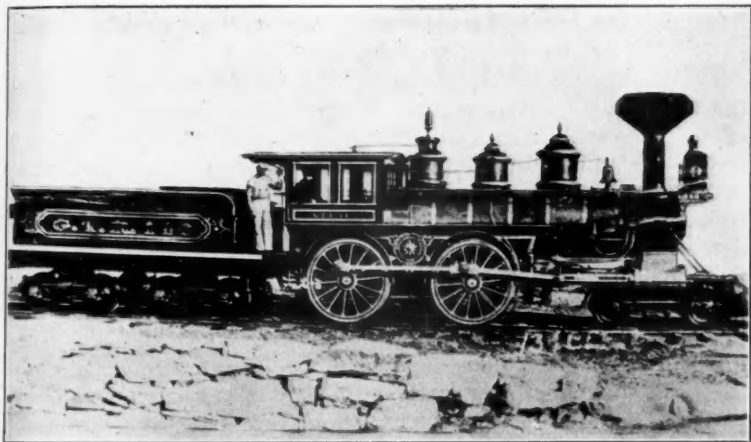
The Company was incorporated in 1848, capital increased from time to time, and in 1856, amounted to \$180,000 and at the present time \$450,000.

The plant is situated a short distance above the Grand Trunk passenger station, with unsurpassed facilities for shipping by land or water.

In 1856 the buildings of the Portland Co. comprised all

usually necessary in such concerns and were in some respects a little peculiar.

On the east, next to the harbor, was a large and commodious shop, 200 feet long and 50 feet wide, for wood work and painting cars etc., close adjoining was the blacksmith shop 200 by 80 feet; built of brick, running nearly north and south. It contained superior facilities for all kinds of forgings, having thirty fires, with hammers and all the necessary machinery in proportion.



Grand Trunk #110, Portland, 1870.

Still further to the north stood the boiler shop, 125 by 50 feet, together with the flask shop.

The west wing out of the main building was the foundry, 175 by 63 feet, with two furnaces, ovens etc., divided into two departments.

On the south adjoining was the main shop 226 by 63 feet, and three stories in height. On the first floor, all the locomotives were set up, while the upper stories were used for machine work, or finishing, pattern making and brass work.

The tender shop, the office and some auxiliary buildings completed the plant.

The works were well equipped with the heaviest kind of machinery of every grade and well calculated to do the largest jobs at short notice. Tracks ran from all quarters of the works

to the railroad and onto the wharf for shipping on board of vessels. The whole works and yard covered about 7 acres.

For many years the Portland Co. was one of the most fortunate and successful manufacturing concerns in Maine. Of locomotives they built five in 1848, eight in 1849, six in 1850, ten in 1851, eleven in 1852, eleven in 1853 and twenty-four in 1854. Of the above, 44 were of 5 foot 6 inch gauge, a few 5 foot, 6 of 4 foot 10 inches and 5 of standard gauge, 4 foot 8½ inches.

In 1856 the principal officers were George Warren, President; Charles Jones, Treasurer; John Sparrow, Superintendent, and about 300 men were employed.

The capacity of the works at that time was one locomotive per week, besides constructing freight cars, marine engines and miscellaneous machinery.

The Panama R. R. was almost as much of an achievement in its day in furthering transportation between the eastern and western seaboard as the canal. There were then no railroads across the United States, and the rush of travel to the gold fields had made the isthmus a stepping stone for hurried thousands who left ship on the Atlantic side, got across the isthmus by boat, diligence or not infrequently on foot, and embarked again on the other side.

The railroad was greatly needed as a tie between the two lines of steamers that plied over the New York-San Francisco route, by way of the isthmus. The Portland Co. secured the order to furnish all the rolling stock for this road, except the passenger coaches.

The locomotives were designed with special reference to the needs of the isthmus, and were different in many respects from those used in the United States.

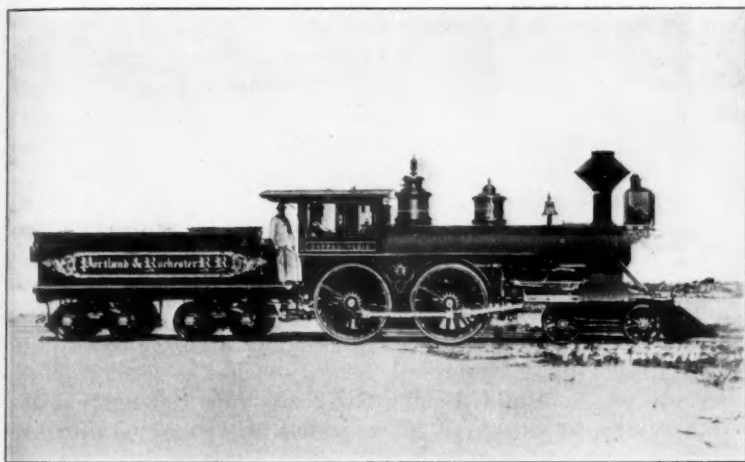
The first locomotive for the Panama R. R. was built in 1852, and was named the "Nueva Granda", then came the "Bogota" and "Panama" and later many others. They were of the 0-4-0 type, saddle tankers, adorned with scrolls, stripes and bands in colors, and there was a great deal of brass work on them.

Of the early locomotives built by the Portland Co. many were inside connected. The early outside connected engines usually had inclined cylinders. Most of the engines turned out by the Company for the first few years were sold to New Eng-

land roads, but they proved so satisfactory that orders were received from all parts of the country where roads were constructed. During the years of 1882-83 they built 100 locomotives for the Northern Pacific.

Besides locomotives, during the civil war, they manufactured over 50 eleven inch cannon for the government. They also built the gun boats "Agawam" and "Pontoosuc".

While the bulk of its business for many years was locomotives, they also built many steam fire engines, between 1860



Portland & Rochester, "Tappan Robie", Portland, 1871.

and 1868, furnishing nearly all New England cities, and many others with machines.

The first fire engine was built to the order of James Johnson, who invented the type. The last one built in 1868 was the "Cumberland" for the city of Portland.

About the year 1860 they also began to build sugar machinery for Cuba.

The writer was a frequent visitor to the Portland Co.'s shops during the '80's and '90's and as an employee of the Maine Central, watched with much interest the building of many locomotives for that road.

It was my privilege during 1887 to follow closely the con-

struction of a locomotive, the second No. 42, which I knew was to haul my regular train. Not much escaped my notice, and on the day she was delivered, our engineer and fireman went over to the Portland Co., got up steam, and ran her along Commercial Street and into the Maine Central yard.

After she was broken in by running her around the yard a few days I coupled her onto her first train and rode in her cab several times on that first trip in order to be up ahead to throw switches, in taking sidings, when passing trains.

That fireman in later years ran that locomotive one mile in 36 seconds, which was a record mile on the M. C. R. R. at that time, and I think holds good today.

About the year 1889 if I remember correctly I saw them build two Boynton Bicycle locomotives, built to run on a single rail. One had the regular locomotive type boiler, was double decked; the engineer riding on the upper deck, with the fireman directly beneath him. The dimensions of this locomotive I never obtained. She had one very large driving wheel about 8 feet in diameter with two small wheels under the tank. The second Boynton locomotive had an upright boiler. One of these locomotives was in service many years at some seacoast resort near New York City.

During the winter of 1889-90, they built a rotary snow-plow for the Leslie Bros., Paterson, N. J., which was used in snow blockades on the Union Pacific Railroad, they stating that the Leslie rotary was the only plow which proved to be effective in that service.

Since the Company has stopped building locomotives they have repaired a great many. Their locomotive building began to decline in the early '90's, and after 1892 what few they built were for narrow gauge roads. None were built later than 1895 with the exception of one in 1907 for the Bridgeton and Saco River R. R. This locomotive brought the total number built to 627.

During the late war they manufactured English 6" and 18 pound high explosive shells, together with a large number of trawlers and special machinery for the Bethlehem Steel Company.

They do a great deal of marine work on wooden steam vessels, build passenger, freight and fishing steamers, also a large elevator business in passenger and freight elevators, paper



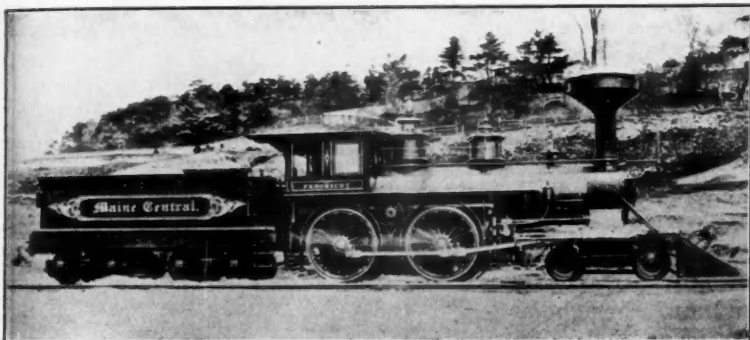
and pulp mill work such as digestors, soda incinerators and special machinery.

Although its locomotive building is a thing of the past, it is one of Maine's most flourishing manufacturing plants today.

I am unable to go into their locomotive inventions, as the Superintendent of the Works informs me the only man that was familiar with them has passed on.

I however was very familiar with many of the old locomotives built for Maine roads. Some of these proved to be exceedingly smart and I will note a few of them.

They built for the Androscoggin & Kennebec road in 1849 three inside connected engines of about 24 tons, numbered 2, 3



Maine Central "Penobscot", Portland, 1871.

and 4, and named "Ticonic", "T. Boutelle" and "Franklin", which later was renamed "J. Morrill".

The "Ticonic" was two tons heavier than the passenger engines, and was used for many years in freight work holding her end up with heavier engines that were built later. Although the "Ticonic" had no sand dome, she was a remarkably smart engine on a hard pull.

The No. 4 was used in freight and passenger work, but for many years was considered one of the most speedy engines in Maine.

They also built No. 9, "C. M. Morse" for the A. & K., also inside connected, which was noted for speed. One peculiarity was her short reverse quadrant; about  $\frac{2}{3}$  of the usual length, and her reverse lever was much shorter than usual, but she

handled very easily. When the lever was in full reverse it stood in about the usual position of being on center, with most reverse levers.

All the above engines had steam domes well forward, and blow off pipes next the cab, bent running boards, with iron fences about half the length of them, and all the 8 wheel locomotives built during the '40's and '50's were practically of the same boiler design.

The No. 1 "Pickering" of the Penobscot & Kennebec outside connected and No. 2 "Gold Hunter" of same road, which were later Nos. 11 and 12 of the Maine Central were famous racers. No. 2 was inside connected and with a light train was the fastest. The No. 1 hauled Gen. Grant (who was at that time President of the U. S.) between Waterville and Bangor, when he made the trip to Vanceboro about 1871 at the opening of the European and North American Railway. She was painted a dark red, with fancy decorations in gilt, as were all those A. & K. and P. & K. engines previous to the early '70's.

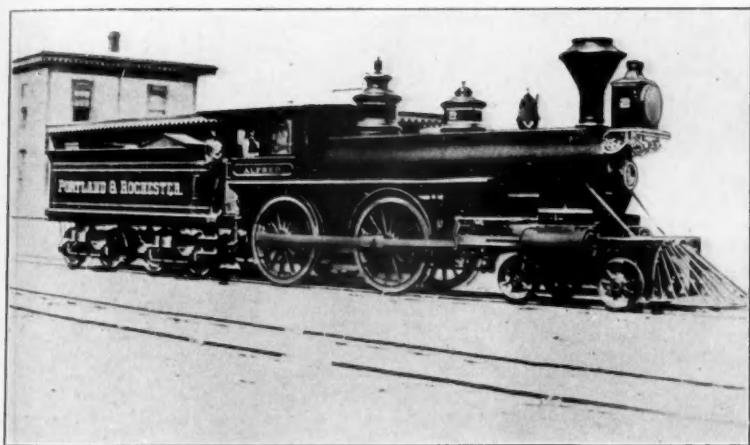
Coming down to a later date the "H. N. Jose" of the Portland & Kennebec road, built in 1870, with steam dome next to the cab, the standard Portland Co. design of those days, was one of the fastest engines it was ever my good fortune to work with, and this 30 ton engine handled an 8 car passenger train and made her time easily.

The "Androscoggin", "R. B. Dunn", and "Arthur Sewell" were also engines noted for their great speed all built in the '70's, but the smartest all around Portland Co. engine I have ever known was the No. 15, "A. D. Lockwood". Speed she had, but her great hold was hauling freight, and she was known for years as the "Queen of the Road".

As a boy I used to spend much of my time riding on her, she was always my favorite engine, but I was not prejudiced in her favor. It was a fact that she would haul two to five cars over the ruling grade more than any other engine of her size cylinders, and for years she could haul one or more cars more than engines with an inch larger cylinder.

25 loads was about all their best engines could haul over this grade; that is engines built in the '70's. I have seen the Lockwood haul 27 loads and 5 empties up this grade, and she was one of the prettiest engines ever turned out by the Portland Company.

In 1883 the Portland Co. built their first extension front, straight stack locomotives. Two for the Maine Central Nos. 88 and 89 attracted a great deal of attention. In those days all straight stacks had an ornamental cap and on all roads that I was familiar with, were painted red. The No. 89 proved to be one of the M. C.'s smartest engines, both in freight and passenger service, but the 95 built in '84 was for a time the fastest engine on any road in Maine. She was one of those rare engines that keep gaining speed as long as her throttle was open.



Portland & Rochester, "Alfred", Portland, 1880.

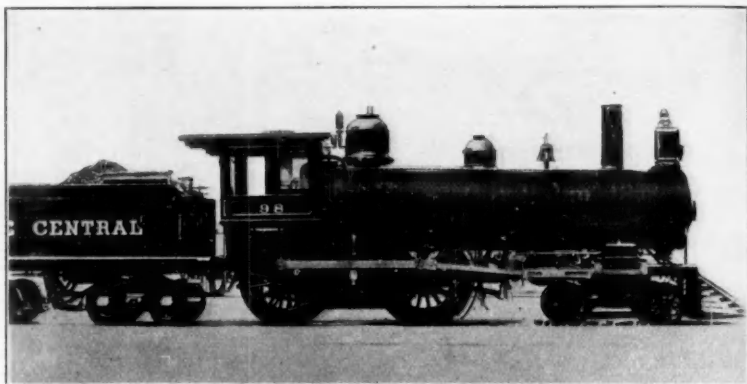
The 99 built in '88 was also a noted flyer. She was in great demand among all the engineers that hauled fast trains.

The Portland Co. built mostly 8 wheelers for standard gauge roads. They however built moguls for a few roads, especially the Portland & Ogdensburg, and the No. 14 "Avalon" was one of the best freight engines of her inches I have ever seen.

In 1890 the Company built a locomotive for the Complete Combustion Co. that was supposed to consume its own ashes, smoke etc. It was a standard 8 wheeler in every respect but its firebox. A stock company had been formed to try out this locomotive and many of the railroad men had invested in it. Engineer Jack Savage of the Eastern R. R. was chosen to run

it, and Leroy Foss the most scientific fireman on the Maine Central was the fireman.

They tried it out on several Maine Central passenger trains, of light tonnage, and it did fair work. The regular engineers went along as pilot for Jack. When they put this locomotive at work on freight trains, however, she would not steam freely enough to haul her train and after two or three trips on freight, she was started out one morning on the Portland-Bath local, got as far as Deering Junction about 3 miles out and she went back on them. Another engine was sent for and she returned to Portland and was not tried out again on the Maine Central.



Maine Central #98, Portland, 1888.

Although I think she made several trips on the Eastern Division of the B. & M. She was a failure however, and the Portland Co. built a standard firebox in her and sold her to the Portland & Rumford Falls Ry., where she ran for years.

The Portland Co. locomotives were smart, and usually long lived. A locomotive built by them in 1877 No. 63, "Wm. G. Davis", of Maine Central R. R. had been in constant service up to June of 1924, when she was scrapped.

In 1908 she had a new boiler and was sold shortly after to the Georges Valley R. R., now known as the Knox R. R., where she ended her days.

Another old Portland Co. the "C. W. Saunders" built in 1875 I think was in continuous service up to about two years ago, when she was put out of commission in a wreck.

## Portland Locomotive Works.

- 1 Portland Saco & Portsmouth, "Augusta," July, 1848, 14x20" 60" insider.
- 2 Atlantic & St. Lawrence, "Montreal," Sept. 1848, 15x22" 60" insider.
- 3 Atlantic & St. Lawrence, "A. N. Morin," Oct. 1848, 15x22" 60" insider.
- 4 Portland, Saco & Portsmouth, "Portland," Dec. 1848, 14x20" 60" insider.
- 5 Atlantic & St. Lawrence, "Machigonne," Dec. 30, 1848, 15x22" 60" insider.
- 6 Atlantic & St. Lawrence, "Oxford," Feb. 24, 1849, 15x22" 60" insider.
- 7 Androscoggin & Kennebec, "Taconic," Apr. 11, 1849, 15x22" 60" insider.
- 8 Atlantic & St. Lawrence, "Wm. F. Prebble," May 16, 1849, 14x20" 60" insider.
- 9 Mad River & Lake Erie, "Portland," July 1849, 13x20" 54" outsider.
- 10 Mad River & Lake Erie, "Oregon," July 1849, 13x20" 54" outsider.
- 11 Androscoggin & Kennebec, "T. Boutelle," Oct. 27, 1849, 14x20" 60" insider.
- 12 Androscoggin & Kennebec, "Franklin," Dec. 1, 1849, 14x20" 60" insider.
- 13 Atlantic & St. Lawrence, "Waterville," Dec. 30, 1849, 15x20" 66" insider.
- 14 Atlantic & St. Lawrence, "Coos," Feb. 1, 1850, 15x20" 66" insider.
- 15 Atlantic & St. Lawrence, "Montreal," May 31, 1850, 15x20" 66" insider.
- 16 Rutland & Washington, "Gen'l Clark," Nov. 30, 1850, 15x20" 66" insider.
- 17 Atlantic & St. Lawrence, "Sherbrooke," Sept. 1850, 16x22" 66" insider.
- 18 Wood, Black Co. "Jenny Lind," Sept. 28, 1850, 15x20" 66" insider.
- 19 Atlantic & St. Lawrence, "Felton," Jan. 1851, 15x20" 60" insider.

- 20 Atlantic & St. Lawrence, "Railway King," June 1851, 17x22" 54" insider.
- 21 Mad River & Lake Erie, "Richland," July 1851, 13x24" 48" outsider.
- 22 Mad River & Lake Erie, "West Liberty," July 1851, 13x24" 48" outsider.
- 23 Mad River & Lake Erie, "Sandusky," Aug. 23, 1851, 14x22" 42" outsider.
- 24 Mad River & Lake Erie, "Huntsville," Aug. 23, 1851, 14x22" 42" outsider.
- 25 Atlantic & St. Lawrence, "St. Lawrence," Aug. 28, 1851, 15x20" 66" insider.
- 26 Atlantic & St. Lawrence, "Richlien," Nov. 1, 1851, 16x22" 66" insider.
- 27 Atlantic & St. Lawrence, "Yamaska," Nov. 1, 1851, 16x22" 66" insider.
- 28 Atlantic & St. Lawrence, "Casco," Dec. 1851, 14x20" 60" insider.
- 29 Atlantic & St. Lawrence, "Forest City," Jan. 1852, 15x20" 66" insider.
- 30 Atlantic & St. Lawrence, "Danville," Mar. 1852, 13x20" 60" insider.
- 31 Wood, Black Co., "Consuelo," May 1852, 13x20" 60" insider.
- 32 Atlantic & St. Lawrence, "Falmouth," May 1852, 14x22" 60" insider.
- 33 Ontario, Simcoe & L. H., "Lady Elgin," June 1852, 14x20" 60" insider.
- 34 Atlantic & St. Lawrence, "Queen," Aug. 1852, 16x22" 66" insider.
- 35 Atlantic & St. Lawrence, "Massawippi," Aug. 1852, 16x24" 54" insider.
- 36 Atlantic & St. Lawrence, "Daniel Webster," Nov. 1852, 15x20" 60" insider.
- 37 Panama R. R., "Nueva Grenada," Oct. 26, 1852, 13x20" 54" outsider.
- 38 Panama R. R., "Bogota," Nov. 13, 1852, 13x20" 54" outsider.
- 39 Panama R. R., "Panama," Nov. 30, 1852, 13x20" 54" outsider.
- 40 Atlantic & St. Lawrence, "Cumberland," Jan. 1853, 16x22" 60" insider.

- 41 Atlantic & St. Lawrence, "Norway," Apr. 1853, 16x22"  
60" insider.
- 42 Atlantic & St. Lawrence, "Nulhegan," Jan. 27, 1853, 14x22"  
66" insider.
- 43 Atlantic & St. Lawrence, "Paris," Apr. 11, 1853, 15x22"  
60" insider.
- 44 Atlantic & St. Lawrence, "Gloucester," June 23, 1853,  
15x22" 66" insider.
- 45 Atlantic & St. Lawrence, "Yarmouth," May 23, 1853,  
15x22" 60" insider.
- 46 Atlantic & St. Lawrence, "Amonoosuc," June 13, 1853,  
15x22" 60" insider.
- 47 York & Cumberland, "Westbrook," Feb. 8, 1853, 13x20"  
60" outsider.
- 48 Atlantic & St. Lawrence, "Vermont," Sep. 20, 1853, 16x22"  
60" insider.
- 49 Atlantic & St. Lawrence, "Gorham," Nov. 16, 1853, 14x22"  
72" insider.
- 50 Atlantic & St. Lawrence, "Oxford," Mar. 1854, 15x22" 60"  
insider.
- 51 Covington & Lexington, "Bourbon," July 11, 1853, 15x20"  
60" outsider.
- 52 Covington & Lexington, "Pendleton," Sep. 6, 1853, 15x20"  
60" outsider.
- 53 Covington & Lexington, "Falmouth," July 29, 1853, 14x20"  
60" outsider.
- 54 Covington & Lexington, "Harrison," Sep. 6, 1853, 14x20"  
60" outsider.
- 55 Lexington & Danville, "John Barclay," Apr. 11, 1854,  
16x20" 66" outsider.
- 56 Atlantic & St. Lawrence, "J. S. Little," Dec. 1, 1853, 15x22"  
72" insider.
- 57 Atlantic & St. Lawrence, "Berlin," Jan. 9, 1854, 14x20"  
66" outsider.
- 58 Atlantic & St. Lawrence, No. 26, Jan. 10, 1854, 14x20" 66"  
outsider.
- 59 Atlantic & St. Lawrence, "St. J. Smith," Feb. 1854, 14x22"  
72" insider.
- 60 Atlantic & St. Lawrence, "Stratford," Feb. 15, 1854,  
14x22" 72" insider.
- 61 Atlantic & St. Lawrence, "Bethel," Feb. 15, 1854, 15x22"  
60" insider.

- 62 John M. Wood, "William Jackson," ? 15x22"  
60" insider.
- 63
- 64 European & N. American, "St. John," ? 12x18"  
54" outsider.
- 65 Panama R. R., "Gorgona," Apr. 1854, 13x20" 54" outsider.
- 66 Portland & Kennebec, "Portland," June 1854, 14x22" 66"  
outsider.
- 67 Grand Trunk Ry., "J. M. Wood," Aug. 29, 1854, 16x20"  
66" outsider.
- 68 Pennobscot & Kennebec, "G. W. Pickering," July 28, 1854,  
14x20" 66" outsider.
- 69 Panama R. R., "Chipso," Sep. 2, 1854, 13x20" 54" outsider.
- 70 Panama R. R., "Marachin," Aug. 31, 1854, 13x20" 54"  
outsider.
- 71 Androscoggin & Kennebec, "C. M. Morse," Oct. 11, 1854,  
15x20" 66" insider.
- 72 Milwaukee & Mississippi, "E. D. Holton," Sep. 19, 1854,  
15x22" 60" outsider.
- 73 Grand Trunk Ry., No. 54, Sep. 9, 1854, 15x24" 60"  
outsider.
- 74 Grand Trunk Ry., No. 55, Jan. 8, 1855, 15x24" 60" outsider.
- 75 Portland & Kennebec, "Gold Hunter," Oct. 24, 1854, 14x20"  
60" insider.
- 76 Grand Trunk Ry., No. 56, Dec. 21, 1855, 16x20" 66" insider.
- 77 Grand Trunk Ry., No. 68, Jan. 17, 1856, 16x20" 60" insider.
- 78 Panama R. R., "Garun," Aug. 30, 1855, 13x20" 54" out-  
sider.
- 79 Panama R. R., "Manzanilla," Aug. 30, 1855, 13x20" 54"  
outsider.
- 80 Nova Scotia R. R. Apr. 4, 1857, 14x22" 66" outsider.
- 81 New Brunswick & Canada, "The Rose," May 10, 1858,  
14x22" 60" outsider.
- 82 Spartanburg & Union, "Spartanburg," Apr. 25, 1856,  
13x20" 60" outsider.
- 83 Grand Trunk Ry., No. 72, June 3, 1856, 16x20" 60" insider.
- 84 Grand Trunk Ry., No. 73, June 18, 1856, 16x20" 60" insider.
- 85 Grand Trunk Ry., "Shelburne," Sep. 9, 1856, 16x20" 60"  
insider.
- 86 Grand Trunk Ry., "C. E. Barrett," Nov. 7, 1856, 16x20"  
66" insider.



- 87 Grand Trunk Ry., "Pownal," Jan. 28, 1857, 16x20" 66" insider.
- 88 Grand Trunk Ry., "J. B. Brown," Mar. 9, 1857, 16x20" 66" insider.
- 89 Panama R. R., "Cardenas," Aug. 27, 1856, 13x20" 54" outsider.
- 90 Panama R. R., "Barbacoas," Aug. 27, 1856, 13x20" 54" outsider.
- 91 Bangor, Oldtown & Milford, "Aroostook," Sep. 17, 1858, 13x20" 60" outsider.
- 92 New Brunswick & Canada, "Manor Sutton," July 6, 1857, 12x18" 54" outsider.
- 93 New Brunswick & Canada, "Earl Fitzwilliam," Aug. 26, 1857, 12x18" 54" outsider.
- 94 Grand Trunk Ry., No. 14, Jan. 19, 1858, 16x22" 60" outsider.
- 95 Grand Trunk Ry., No. 167, Mar. 15, 1858, 16x22" 60" outsider.
- 96 Nova Scotia R. R., No. 9, Apr. 16, 1858, 16x22" 60" outsider.
- 97 Nova Scotia R. R., No. 8, June 14, 1858, 16x22" 60" outsider.
- 98 New Brunswick & Canada, "The Thistle," July 1, 1858, 12x18" 54" outsider.
- 99 Nova Scotia R. R., No. 12, Oct. 12, 1858, 16x22" 60" outsider.
- 100 Nova Scotia R. R., No. 14, Jan. 10, 1859, 16x22" 60" outsider.

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## The Old Ship Railway of Chignecto.

By C. WARREN ANDERSON.

One of the biggest undertakings ever attempted in the Maritime Provinces of Canada was the building of a "ship railway," planned to carry ships across the isthmus of Chignecto, that narrow strip of land connecting New Brunswick with Nova Scotia. All shipping instead of going around the Nova Scotia peninsula could be taken overland by rail from the Bay of Fundy to the Northumberland Straits in three hours, at least craft not exceeding forty-five hundred tonnage could be handled in this way. The scheme was a feasible one and was approved by Sir Benjamin Baker, who made a per-

sonal inspection of the situation and if misfortune had not dogged the steps of George C. Ketchum, the promotor, we would have seen whether or not the project was practical.

George C. Ketchum was a Fredericton man who had done big things in contracts for the old Intercolonial Railway. He is described by those who knew him, as being a tireless worker of unfailing optimism and a firm believer in his work. No one ever met the man and listened to his conversation on the subject without feeling confident of its ultimate success. He had first conceived the idea of a ship canal across the isthmus, but the difference in tide levels made this idea impracticable. The tide rose only four feet at Tidnish while on the Bay of Fundy side of the isthmus the flow was sixty-five feet. He had contemplated many other enterprises of a similar nature, but on a larger scale, if the Amherst one had been successful, such as a railway that would handle much larger vessels from Georgian Bay in Lake Huron across to Lake Ontario via Lake Simcoe. If successful there, he would try the Panama.

Ketchum went to England and organized a company which operated on English capital the financiers being Baring Bros. The leading contractors were Meggs & Son who in turn sublet to others. The masonry was in charge of Symonds a noted Scotch builder. Over four thousand men were employed, a large number were Italians and a contractor named Morris, brought a large force of French-Canadians, with all their equipment from Quebec. The land needed for the operation was given free by the County Council, who appointed appraisers to appraise all property involved and settle with the owners. This was done but the small price per acre paid caused considerable dissatisfaction as a clear deed was given in each case, and it remains in possession of the company to this day. The Canadian Government gave aid. Sir John A. McDonald, Canada's first premier after confederation, and Sir Charles Tupper being greatly interested. The company was given three years in which to build and were to receive a subsidy of twenty thousand dollars per annum for a period of twenty years.

The dock at Amherst end of the road was constructed inland and the water to be let in later. At Tidnish terminal a temporary dam was built, covering an area of shallow water extending inland nearly half a mile. This area was dredged to permit operations. At the docks, which were forty feet

deep, the ships were placed on a ribbed frame-work, which clamped on the vessel, the whole being hoisted by hydraulic machinery and placed on the rails. In other words this frame-work was nothing more than a kind of railway car upon which the ship travelled. Two tracks, four rails in all, ran parallel the complete distance from dock to dock and was seventeen and a quarter miles. All the machinery, rails, engines and boilers, were brought from England, over eight hundred thousand dollars duties being paid to the Canadian Government.

At a distance of ten miles from Amherst was a boggy district. The settlers around the vicinity claimed this was bottomless and prophesied failure there, but the engineers were not to be out-done, they sank rock for a depth of sixty feet to a solid foundation, of a distance of a mile and a quarter and it stands, to day, as firm as ever. Work was commenced in the fall of 1888 and progressed favorably until 1890, when Baring Bros. were involved in disastrous deals in South America and forced the company to suspend operation for a time. Sir John A. McDonald died in June 1891, and Sir Charles Tupper went to England shortly afterward. Many influential men in Prince Edward Island and St. John, N. B., such as shipping authorities, sea captains, etc., opposed the scheme for interests of their own, probably because the railway had subsided small companies to handle shipping. These opposing forces together with unscrupulous politicians, undermined the government support. An extension of several months was given and Ketchum did his best. The heavy steel rails were laid the entire length of the road with the exception of a small bridge about three miles from the dock. The Amherst dock was about completed, the Tidnish one was not so far advanced. Five millions of dollars had been spent. Less than a quarter of a million would be needed to finish the job. A grand opening day was planned and a full rigged ship was to make the trip, many noted persons were to be present. Proceedings were halted while a final drive for the necessary funds were made.

When at last the required amount necessary for the completion was raised the extra time allotted had expired and to the company's dismay no further time would be granted by the government, who withdrew all their support. Their hopes were blasted.

If successful, the Ship Railway would have shortened the

distance between the North Shore ports and other ports south, five hundred miles. The project of diverting the shipping passing through the Straits of Canso, to the Chignecto channel, quite naturally was not popular in eastern Nova Scotia nor in Halifax, which as a port of call stood to lose business which St. John would have gained. Not a good word could be obtained for it in that city (Halifax). Mr. Thompson, later Sir John S. D., who represented the county of Antigonish, Nova Scotia, showed a determined animosity against it and when he became premier he determined to give it its quietus, though it was then nearing completion at the entire expense of the British investors. The expiration of the charter gave him the needed pretext. That no charter had ever before in like circumstances in Canada been refused a renewal, and while in no British colony had it ever been refused, did not deter the then premier from his purpose. He was determined that the project should not go through and he succeeded very nicely in doing so. The question may be asked how did New Brunswick, and especially St. John City, meet this crisis? It is a matter of history that the undertaking was a pet of Sir John A. McDonald but he had gone to his "long home," Sir Charles Tupper was in England and Sir Leonard Tilley had retired to the Governorship of the Province. The representative of the province in the cabinet was a very worthy gentleman, but not of sufficient calibre to stand up and assert his rights or that of interest to the province. Unfortunately the political machine, which is always more intent on dividing up patronage than interest in questions of statesmanship, followed his leadership and that controlled the press and even the Board of Trade of St. John. Therefore the undertaking was smashed without a protest.

G. C. Ketchum had a cottage at Tidnish and a house at Amherst. Coming into town one warm afternoon, tired and discouraged, he lay down to rest as soon as he reached home and passed away in sleep. His sudden death was not entirely unexpected, as an English specialist who had examined him predicted just such an ending. Mr. Ketchum was a very large man, weighing about two hundred and eighty pounds and used himself unsparingly. Men of his type with such foresight, zeal and executive ability are sorely needed in every nation.

The Amherst dock was an example of superior mason work seldom seen on this side of the Atlantic. The whole enterprise

displaying engineering skill of the highest order, as many famous men were connected with the work, O'Rourke, the American who afterward built New York's first sky-scraper, Maurice Fitzmaurice, famed for irrigation work with the Nile in Egypt, also for his conspicuous ability in connection with the tunnels under the Thames River, Eng., later knighted and now chief consulting engineer for the City of London. Nearly all the responsible positions were held by men from the Old Country, men of experience and proven ability.

All that now remains is a brick power house, now a cattle shed and meeting place for black birds, and a great pile of huge stones neatly cut in different dimensions. There are also two large piles of gray colored cubes, once barrels of cement, but the wood has rotted away completely. The Bay of Fundy tides have filled the Amherst dock completely, with mud, till now not a stone is visible of the magnificent masonry and stone erected with so much skill, time and expense. The rails and machinery were sold. The splendid roadbed, constructed by some of the ablest engineers the world produced, remains intact, merely covered by weeds and grass, ready for some progressive individual or company to utilize in some method of transportation from Amherst to the summer resort of Tidnish.

The "Ship Railway" is forgotten by many, but the old residents in its vicinity are as yet after thirty-two years, convinced that the scheme would have succeeded and brought prosperity to all concerned; they had hoped for its fulfillment till the election of 1896. They had small benefits from its construction as nearly all the labor was imported, the remuneration they received for their land was ridiculously small and the country taxed for the amount. If there is a moral to be learned, it is not to trust to the ingeniousness of job or party dealers.

## Some British Locomotive Reminiscences.

By NORMAN THOMPSON.

Memory turns the clock back one quarter of a century—to an era when power and symmetry in the lines of a locomotive went hand in hand. A vision appears of graceful single-wheelers resplendent in bright paint and shining brasswork; whose glamour was enhanced by the inspiring names they bore, screwed on in big lettering over the driving splashers.

These wonderfully appropriate names had been handed down in many cases from notable machines of the past; they mostly denoted the idea of speed or power—for instance "Lightning," "Swallow," "Greyhound," "Racer," "Storm King," "Fire King," "Achilles," "Behemoth," "Iron Duke," "Tornado," "Majestic"; to recall a few only.

Reference is of course made to the famous "seven-foot-eight" singles of the Great Western Railway, which commenced to pour out from Swindon Works in 1892, and continued appearing in a steady stream until the family eventually numbered eighty members.

The first thirty engines originally came out as 2-2-2 type, the 4-wheel leading truck being fitted later, and applied to the remainder as built.

The drivers were 92 inches, cylinders 19x24" steam pressure 160 pounds. The boiler was surmounted by a huge brass dome, always kept scrupulously polished to the Nth degree; and a brass safety valve casing. The prevailing colour scheme was a dark green, the underframe being painted red-brown, as also were the buffer beams.

These beautiful engines ran with a smoothness—a sort of gliding motion—that has never been equalled by their sisters of the "coupled" persuasion, and prior to the epidemic of dining cars that ran the weight of the principal express trains to a figure beyond their capacity, they performed some remarkable work.

Once known and loved throughout this system—the most far-flung in the British Isles—the race is now alas! extinct, not a solitary specimen having been preserved to posterity. Quick

ly they came on the scene—as quickly they vanished; cut off prematurely in the height of their glory.

One also recollects a few other “singles” dating from earlier times and of various classes, some of them having been re-built during the course of a long career. Of these, “Sir Daniel” was an 84” engine with 17”x24” cylinders, constructed sometime in the late sixties, the total of this class numbering thirty, all of which were converted to the 0-6-0 type between 1899 and 1901. The “Sir Alexander” class were slightly larger. 84” inch singles dating from 1875, and also comprising about thirty engines.

“Conversions” have been a frequent event in British loco-



London & North Western Ry. #2184, “Reynard”.

motive life owing to the long careers often enjoyed by these machines; when re-building becomes desirable, a new mechanical engineer may wish to introduce a change of design, or the traffic conditions have altered considerably. In some instances little of the original engine remains, with the exception of the name and number plate but in others there is a genuine rebuild, the old parts being utilised to a very great extent.

An interesting class of 78” singles, originally built in 1872-5

at Wolverhampton, were converted in 1895-6 to four-coupled, and named after rivers flowing through the Great Western sphere of influence. In this form they were often seen by the writer, but it is believed that all have since perished.

In 1894, Great Western standard practice included the inside position for cylinders, and flush or wagon-topped fire-boxes; and it was in that year also that the 4-4-0 wheel arrangement became general. Four engines of the latter type had been converted from Broad Gauge machines; and one of these—"Armstrong"—was formerly arranged as a tandem compound, in which condition she, however, failed to give satisfaction, being altered to work on the "simple" principle.

In this connection it may be remarked that "compounding" has never met with any great degree of favour in Great Britain, spite of a number of trials on different railways, and the achievement of, in at least one case, a high degree of success.

In the period under consideration almost all Great Britain engines sported the steam dome, although in earlier and later days the perforated pipe method was used for steam collection. One remembers the excitement produced in one's home city when a domeless locomotive appeared and upset the accepted traditions of the local engine devotees arousing mingled feelings of curiosity and disgust. Another severe shock was occasioned by the advent of an engine wearing a painted dome of dull green, instead of the polished brass that the enginemen could use for a mirror when so minded.

Tank engines have long been used in the British Isles for many varieties of work owing to their convenience in being able to run in either direction without requiring to be turned. This is possible on account of the comparatively short distances found there, a moderate supply of water being sufficient.

On the Great Western Railway local passenger trains were often hauled by a prolific class of "saddle" tanks, which were also largely employed in freight work. These were wonderfully ugly little machines emanating from the Wolverhampton Works of the Railway and their number required four figures to express it.

Side tanks of both the 2-4-0 and 0-4-2 types assisted in passenger service, and in the London District there were running a class of side tank engines provided with a weatherboard only in place of the usual cab. They used to be employed on high-



speed short-distance trains, and the lot of the men on the foot-plate, sometimes exposed to driving sleet and snow could scarcely have been an enviable one.

Cabless engines were also in use on the Metropolitan and Metropolitan District Railways of London, both for underground work and in the open.

Returning for a moment to the "single" type, one had only to cross the platform to gaze upon a splendid rival to the Great Western monarchs. This time it was a Midland Railway creation, garbed in a handsome red livery well set off by the black smoke box and chimney. The latter, usually a most expressive feature of a locomotive in older days, was of a pattern that completed the dignity and harmony of the entire design. The dome was painted red and of moderate dimensions, but the safety-valve boasted a brass casing. The whistle was a deep-throated one, and the outstanding impression gained from a survey of these fine machines that of determination, implacability—even grimness.

These were the well-known "Johnson" singles, those coming under the observation of the writer being of two classes. The earlier series came out in 1893-6, having 90" drivers and 19"x26" cylinders; followed by a slightly larger variety equipped with driving wheels three inches more in diameter, and 19½"x26" cylinders. The steam pressure was 160 pounds in the first case and ten pounds additional for the other, piston valves being fitted in both instances.

These engines performed splendid work on the Midland Railway for a number of years, and nearly one hundred of them still survived at a quite recent date after practically all other British rivals of the type had disappeared.

It has been claimed that, given a reasonable load, the "single" type is more economical in operation than a coupled engine of approximately the same power. The single driver has always been somewhat of a rarity in the United States, but it is interesting to note that about the year 1840, a batch of eight single engines was obtained from Philadelphia for working the Liekey incline of the Midland Railway.

Another specimen of the type found its way across the Atlantic in 1882 and ran a few trips on the English Great Northern Railway. This locomotive, originally intended for service on the Philadelphia and Reading Railroad, owed its

construction to the Baldwin Works; it bore the name "Lovett Eames" and was put together at Manchester (England) and afterwards broken up in London, the bell finding a resting place in the engine shed at King's Cross.

The drivers of this engine were 78", cylinders 18"x24", pressure 135 pounds; and a curious arrangement enabled a portion of the weight on the trailing wheels to be transferred to the drivers when desired. A large cab and fancy boiler mountings were provided.

One retains pleasing recollections of a number of runs on the footplate of a small London and North Western Railway engine of the 2-4-0 type; this locomotive drew one of the private official saloons, and with such a load the weight of years sat lightly upon it.

On this Railway the Engineer's position was, contrary to the usual practice, on the left-hand side; a very convenient location for observing signals. Owing to the short block sections, looking out for semaphores keeps a man busy when running at high speed in the old country, and the sudden apparition of a whole bridge of them spanning the tracks of a large yard calls for quick decision and action.

The writer on one occasion handled this engine throughout a sixty-mile non-stop run, and although much of the track lay alongside the sea, hardly a single impression of the noted scenery came to mind.

Another interesting footplate run was from Rugby to Crewe, about eighty miles over a crowded main line, partly four-tracked.

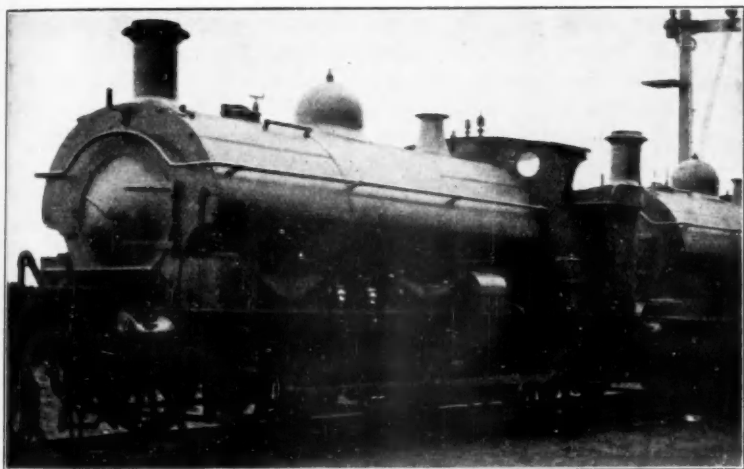
Going back to 1893, what was at the time considered to be the last word in locomotive design on this Railway made its appearance in the Greater Britain class. At this period the Webb compounds—a mighty black tribe—flourished exceedingly throughout the L. & N. W. R. system; they enjoyed a fairly good career until the advent of a new chief at Crewe sealed their doom, whereafter an orgie of extermination commenced, either by scrapping or conversion.

"Greater Britain" was of the 2-4-2 "uncoupled" type, with three cylinders; she always seemed to give the impression of having a prodigiously long boiler that quite dwarfed the tender: "QUEEN EMPRESS" a sister engine was exhibited at Chicago.

A feature of this Railway's practice was the avoidance of a leading 4-wheel truck until after such had become standard on other lines; the compounds were of both the three and four cylinder types; the former acquiring a most uncomfortable trick of snatching at their trains when starting, in a series of diabolical jerks that were hardly calculated to make for their popularity.

Some singles were to be seen on this Railway also, carrying out various light duties; they were all rather ancient at the period under review, but included in their number the celebrated "Cornwall."

About 600 engines bore names, many of which, however,



Great Western Ry. #1624. Six coupled saddle tank.

were not happily chosen; titles were selected from amongst celebrities, both living and of the past; including Greek mythology; names of ocean liners sailing from Liverpool in connection with the trains of this Company; and a truly wonderful mixture of other sources.

One of the most interesting engine types that came under the notice of the writer during the closing years of the nineteenth century was the "Terrier" class of the London, Brighton and South Coast Railway. These machines had been specially designed to operate over light tracks and were consequently of

fairly diminutive dimensions; in spite of their size, however, the work done in hauling suburban trains of 100 to 120 tons over steep gradients was quite remarkable, and they performed such duties satisfactorily for a number of years.

The terriers were built between 1872-1880, and no less than fifty of them came into existence; they had 48" wheels six-coupled (0-6-0) 13"x20" cylinders, and weighed just over 24 tons in full working order. The top of the chimney was less than 12 feet above the rail. Rapid acceleration was a valuable feature of these wonderful little engines, some of which were afterwards converted into the 2-4-0 type by the removal of the leading pair of coupled wheels and substitution of a smaller pair. It was found, however, that they were more efficient in the former state, and they reverted to their original condition.

This Railway at that time decked their engines in a highly startling, but withall pleasing, livery of "gamboge", which formed an excellent advertisement for the Company. Once seen, the distinctive colouring of a "Brighton" locomotive could hardly be forgotten.

Names chosen from stations and villages in the territory served by the system were painted on the side tanks in neat gold lettering, and proved an added attraction to youthful enthusiasts who used to haunt the right-of-way fences, armed with note-book and pencil.

It may be of interest also to mention that the Great Eastern Railway experimented with a "Decapod" tank engine in 1900. One remembers inspecting this somewhat revolutionary creation at the Stratford Works of the Company, where it occasioned a considerable amount of interest. This locomotive, however, it is believed, never went into regular service, and it shortly underwent a process of conversion to the 0-8-0 type; and even in that form only had a comparatively brief existence.

## **Railway Celebration at York, Pennsylvania.**

On Thanksgiving Day, November 27th, 1924, the Engineering Society of York (Pa.) and the Vigilant Steam and Chemical Fire Engine Company Number 1 held a celebration in the honor of Phineas Davis, a resident of York. It will be recalled that Mr. Davis won the prize of \$4000.00 in 1831 for constructing and delivering to the Baltimore & Ohio R. R. a locomotive model which met the requirements of that road. This locomotive was named the "York."

This model was on exhibition at this celebration and the old "Atlantic," which Mr. Davis also built, and now owned by the road and used for such occasions was also at the celebration. The "Atlantic" was placed on the street car tracks and hauled the old coach "Nova Scotia" to the delight of the people at the celebration. For the information of our readers, the "Atlantic" is still able to make steam and perform the way she did over ninety years ago.

Several memorial services were held. The first was held in the old Quaker meeting house. In the afternoon the Vigilant Fire Company unveiled their tablet in honor of Mr. Davis on his old home and later in the day the Engineering Society unveiled their tablet in Penn Common, the town square in York given by William Penn. This tablet records Mr. Davis as "Mechanical Engineer, designer and builder of the first successful coal-burning locomotive in America."

Needless to say the old "Atlantic" chugging up and down the street railway track was the center of attraction. Mr. Lawrence E. Galloway operated the engine and it was his grandfather who first operated this engine for the Baltimore & Ohio in September, 1832.

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## **New York And Erie Railroad.**

This road is one of the longest single roads in the world. The length of all the tracks of the main road and branches owned by the company would form a single track 755 miles long. The number of employees is 500, the annual pay of which is about a million and a half dollars; 203 locomotives and 3000

cars of all kinds are used on the road. The largest locomotives cost \$12,000 each, from \$6000 to \$8000. A first-class passenger car costs about \$3000, and a freight car about \$600. The company has a telegraph with sixty agents, so that any occurrence on the road can be instantly made known to the officers of the road. Four compositors and half a dozen presses are constantly employed in doing the printing of this colossal corporation. Truly this is a gigantic enterprise.—News item of 1856.

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### To A Locomotive in Winter.

Thee for my recitative,  
Thee in the driving storm even as now, the snow, the winter  
day declining,  
Thee in thy panoply, thy measured dual throbbing and thy  
beat convulsive,  
Thy black cylindric body, golden brass and silvery steel,  
Thy ponderous side-bars, parallel and connecting rods, gyrating,  
shuttling at thy sides,  
Thy metrical, now swelling pant and roar, now tapering in  
the distance,  
Thy great protruding headlight fix'd in front,  
Thy long, pale, floating vapor-pennants, tinged with delicate  
purple,  
The dense and murky clouds outbelching from thy smoke-stack,  
Thy knitted frame, thy springs and valves, the tremulous  
twinkle of thy wheels,  
Thy train of cars behind, obedient, merrily following,  
Through gale or calm, now swift, now slack, yet steadily  
careering;  
Type of the modern—emblem of motion and power—pulse of  
the continent,  
For once come serve the Muse and merge in verse, even as here  
I see thee,  
With storm and buffeting gusts of wind and falling snow,  
By day thy warning ringing bell to sound its notes,  
By night thy silent signal lamps to swing.  
Fierce-throated beauty,  
Roll through my chant with all thy lawless music, thy swinging  
lamps at night,

Thy madly-whistled laughter, echoing, rumbling like an earth-  
quake, rousing all,  
Law of thyself complete, thine own track firmly holding,  
(No sweetness debonair or tearful harp or glib piano thine.)  
Thy trills of shrieks by rocks and hills returned,  
Launched o'er the prairies wide, across the lakes,  
To the free skies unpent and glad and strong.

WALT WHITMAN.

( From "Leaves of Grass," first published 1855 ).

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On January 13th, 1925, the Chicago, Indianapolis & Louisville R. R. celebrated its 75th anniversary. The original company was the New Albany & Salem R. R., incorporated June 8th, 1847, to build a railroad between the two points mentioned. Construction was begun in 1849 and the road opened for traffic on January 13th, 1850.

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## Railroad Chronology.

*From the Railroad and Insurance Almanac for 1865.*

There were short roads, called tram-ways, in and about Newcastle, England, so early as the middle of the 17th century; but they were made of wood, and were used for transporting coals a moderate distance from the pits to the place of shipping. They are thus mentioned in 1676: "The manner of the carriage is, by laying rails of timber from the colliery to the river, exactly straight and parallel; and bulky carts are made with four rollers fitting these rails, whereby the carriage is so easy that one horse will draw down four or five chaldron of coals, and is an immense benefit to the coal merchants"—(Life of Lord-Keeper North). They were made of iron, at Whitehaven, in 1738. The first considerable iron railroad was laid down at Colebrook Dale in 1786. The first iron railroad sanctioned by Parliament (with the exception of a few undertaken

by canal companies, as small branches to mines) was the Surrey Iron Railway (by horses), from the Thames at Wandsworth to Croyden, for which the Act was obtained in 1801. The first great and extensive enterprise of this kind, where steam was used in England, was the Liverpool & Manchester Railway, commencing in October, 1826, and opened September 15, 1830. The following were among the earliest roads constructed in Great Britain:

Surrey (by horses)	opened 1805
Stockton (by horses)	Sept. 1825
Canterbury & Whitstable	May 1830
Liverpool & Manchester	Sept. 15, 1830
Edinburg & Dalkeith	1831
Bolton & Leigh	June 1831
Dundee & Newtyle	Dec. 1831
Warrington	1833
Dodmin & Wadebridge	1834
Leeds & Selby	Sept. 1834
Dublin & Kingstown	Dec. 17, 1834
Whitby	May 1836
Newtyle & Cupar Angus	Feb. 1837
Paisley	April 1837
Grand Junction	July 4, 1837
Manchester & Bolton	May 1838
London & Birmingham	Sept. 17, 1838
Sheffield	Oct. 1838
Preston	Oct. 1838
Dundee & Arbroath	April 1840
London & Brighton (part)	May 1840
London & Southampton	May 11, 1840
Lancaster & Preston	June 1840
Manchester & Birmingham	June 1840
York	June 1840
West Durham (part)	June 1840
Preston & Wyre	July 1840
North Midland	July 1840
Maryport	July 1840
London & Blackwall	July 4, 1840
Great Western	August 1840
Glasgow & Ayr	August 1840



Northern & Eastern (part)	Sept. 1840
Chester & Birkenhead	Sept. 1840
Birmingham & Gloucester	Sept. 1840
Chester & Creide	Oct. 1840
Taff Vale (part)	Oct. 1840
Manchester & Leeds	Oct. 1840

The Surrey Iron Railway Company was formed in 1801, for making and maintaining a railway from the town of Wandsworth to Croyden—nine miles. Cost £60,000, a double line of rails.

1827. The Granite Railroad, chartered in 1825, was opened for business, three miles, from Quincy to Neponset River,

Massachusetts—the first railroad in the United States. It was constructed with a flat rail, laid on longitudinal sills, for which stone sills were afterwards substituted.

Mauch Chunk and Summit Hill Railroad, Pennsylvania, commenced operations in the coal regions of Pennsylvania. This was the second railroad in the United States. The loaded cars descended by their own gravity.

Baltimore & Ohio Railroad Company chartered by States of Maryland and Virginia.

1828. The Liverpool & Manchester Railroad projected—the trade between the two cities being 1200 tons daily. In the British Almanac for 1829 may be found George Stephenson's estimate of material and cost.

The Baltimore & Ohio Railroad was commenced (July 4th) with formal ceremonies.

1829. The subscribers of the Thames Tunnel enterprise met in London—June.

October—A prize of £500 awarded to George Stephenson, for the best locomotive—speed attained, thirty miles an hour.

December 30—The Welland Canal, connecting Lakes Ontario and Erie, opened for travel and commerce.

The Carbondale & Honesdale Railroad (from the Delaware & Hudson Canal to the Northern or Lackawanna coal fields) opened for business. The second railroad in the State of Pennsylvania.

The Mill Creek and Mine Hill Railroad, Pennsylvania, opened for business.

The Chesapeake and Delaware Canal, 13½ miles, finished

(from Delaware City on the Delaware River, forty two miles from Philadelphia, to Back Creek, a branch of Elk River, Chesapeake Bay). This canal was used for four years for travel between Philadelphia and Baltimore.

1830—September 15. The Liverpool & Manchester Railroad opened for business.

The Boston & Lowell Railroad incorporated—25 miles.

Baltimore & Ohio Railroad opened for travel—14 miles—to Ellicott's Mills.

1831. Charters granted to the Boston & Providence and the Taunton Branch Railroad Companies.

Baltimore & Susquehanna Railroad opened for travel, as far as seven miles, (now the Northern Central R. R. from Baltimore to Harrisburg).

The Mohawk & Hudson Railroad, afterwards (in 1847) known as the Albany & Schenectady Railroad, and in 1853 made a part of the New York Central, was chartered in 1826, commenced in 1830 and finished in 1831. It was one of the first roads in the United States on which locomotives were used. It was constructed with inclined planes and stationary engines.

Two new roads commenced in England; Newcastle & Carlisle and the Leicester & Swannington Railways.

1832—August. Work commenced on the Boston & Worcester R. R.

Newcastle & Frenchtown Railroad, Delaware (from the Delaware Bay to Chesapeake Bay) ten miles, opened to travel, mainly for passengers.

The Dundee & Newtyle Railroad—11 miles—opened for travel; speed, one hour and a quarter for the whole distance.

December 22. Camden & Amboy R. R. partly opened for travel.

1833. Act of Parliament for the construction of the London & Birmingham Railway; also the London & Greenwich Railway. Confident expectations and promises that the speed on this railway might reach twenty miles an hour.

The Philadelphia & Trenton Railroad—28 miles—opened to travel.

1834. The Camden & Amboy Railroad was the first constructed in the State of New Jersey, 61½ miles. Chartered in 1830, partly opened for business—14 miles—in December, 1832, and finished in 1834.

Philadelphia & Columbia R. R. (82 miles) opened for travel (now part of the Pennsylvania Central Railroad).

May. The railroad between Charleston and Hamburg (S. C.) 136 miles, opened for business.

Dec. 1. The Baltimore & Ohio Railroad opened.

Baltimore & Port Deposit Railroad Co. chartered (for a road from Baltimore City to Port Deposit, on the Susquehanna River, 36 miles).

1835. July 6. Boston & Lowell Railroad (incorporated 1830), 26 miles, opened for business June 27; Boston & Providence Railroad, 41 miles, June 2nd, in part; Boston & Worcester Railroad opened for business, July 6th.

Aug. 25. Baltimore & Washington Railroad completed for passengers.

Dec. 7. The road from Nuremburg to Firth opened—the first in Germany.

May 5. The first railroad in Belgium finished—Brussels to Malines—12¾ miles.

1836. June 23. The steamboat Novelty made an experimental trip from New York to Albany with anthracite coal as fuel.

August 1. The Utica & Schenectady R. R. commenced business.

The Bangor & Piscataquis R. R. chartered in 1833, was opened for travel this year, being the first road built in the State of Maine.

The New Jersey Railroad & Transportation Co. opened its road for business in 1836, between Jersey City and New Brunswick, being the second road constructed in the state. (Eight miles, Newark to Jersey City opened in 1834).

1837. June 19. Railroad from Baltimore to Wilmington, Del., partly opened for travel.

The railroad from Harrisburg to Lancaster (36 miles) opened for travel in 1837.

Nov. 10. Providence & Stonington R. R., (41 miles) opened for travel.

Aug. 26. A railroad from Paris to St. Germain opened. The Boston & Providence R. R. opened for travel.

1838. Sept. 16. The railway from London to Birmingham opened for business the entire length—time, 4 hours, 48 minutes.

The Philadelphia, Wilmington & Baltimore R. R. partly opened for travel.

London & Southampton (now Great Western) R. R. in part opened, 23 miles.

Sept. 2. Railroad from Ghent to Osten opened for travel.

Dec. 23. The Nashua & Lowell Railroad, was opened for business, commenced in 1837.

The Hartford & New Haven Railroad was partly opened for travel this year, being the first in the state. Commenced in 1836 and finally completed in 1839.

1839. The Western Railroad, (Massachusetts), opened for business Oct. 1st.

The Philadelphia & Reading R. R. (58 miles) opened for travel and the coal trade; and the Williamsport & Elmira, 25 miles.

Railroad from Wilmington, Del., to the Susquehanna River, 35 miles, opened for travel (now part of the P. W. & B. R. R.)

Apr. 7. Opening of the road from Leipsic to Dresden.

Aug. 2. Opening of the road from Paris to Versailles.

The Trenton branch of the Camden & Amboy R. R., and that portion between Trenton and New Brunswick, were finished in 1839.

1840. The Norwich & Worcester R. R. was opened for travel.

The Eastern R. R. (Massachusetts) in course of construction.

July 1. New Bedford & Taunton R. R. opened for business.

Railroad from Annapolis, Md. to the Baltimore & Ohio R. R. finished (22½ miles).

The following railroads in Great Britain were finished this year: Lancaster & Preston, 20½ miles; Northern Midland, 72¼; Hull & Selby 30¾; Preston & Wyre 19½; Slamannan, 12½; Chester & Birkenhead, 14½; Chester & Creide, 20½; Stockton & Hartlepoole, 8¼. The following lines are partially opened: London & Brighton (total 61); Manchester & Birmingham, 72¼; Birmingham & Gloucester, 23; Maryport & Carlisle, 28; Glasgow & Greenock, 22½; Northern & Eastern, 30; Taff Vale, 41½; London & Blackwall, total 94¼.

1841. March 30. The Glasgow & Greenock Ry. opened for travel (22¼ miles).

June 30. The Great Western Ry. opened throughout (Paddington to Bristol, England).

Aug. 12. The first passage made through the Thames Tunnel, by Sir I. Brunel.

Sept. 1. Railway opened for travel from Cologne to Aix La Chapelle.

1842. Aug. 10. The Manchester & Birmingham Ry. opened for travel.

May 26. London & Dover Ry. opened for travel to Tunbridge.

1843. The Central Railroad of Georgia (Savannah to Macon), 190 miles, opened.

Mar. 25. The Thames Tunnel opened to the public for foot passengers.

1844. The total number of miles of railways constructed this year in Great Britain was 241.

1846. There are 61 miles of railroad in the State of Maine, 35 in New Hampshire. The Legislature of Massachusetts chartered 18 railroad companies this year.

1847. The Providence & Worcester R. R. opened for travel.

1848. The Vermont Central R. R., the first in the State, was opened this year as far as Northfield, 53 miles.

The Suspension Bridge near Niagara Falls was finished this year, by Mr. Ellet, the engineer, who first crossed in July 29th.

Death of George Stephenson, August 12th.

1849. Dec. 11. The Boulogne & Amiens Ry. opened for travel.

1850. June 25. Railroad Jubilee at Burlington, Vt.

Pennsylvania Coal Co. Ry., 47 miles, opened for the coal trade.

July 31. Railroad convention at Portland, Maine in favor of a railroad from Portland to the Provinces. Forty-four miles of the Atlantic & St. Lawrence R. R. (Portland to Montreal) in operation this year. Railroad from Portland to Augusta and Portland to Somersworth, in course of construction. Also Troy & Rutland R. R., Whitehall & Rutland R. R., Fitchburg & Worcester R. R., Connecticut Valley R. R., Connecticut & Passumpsic R. R., Coheco R. R. and Portsmouth & Concord R. R.

1851. September. Telegraphic communication established between Dover and Calais.

1853. Total length of railroads in the U. S. in 1853 was 14,494 miles.

July 18. The Atlantic & St. Lawrence R. R., from Portland to Montreal, was opened throughout the entire length, 292 miles.

- Jan. 12. Baltimore & Ohio R. R., 379 miles, from Baltimore, Md. to Wheeling, on the Ohio River, opened for travel.  
Dec. 9. Railroad riots at Erie, Pa.  
1854. Oct. 25. Railway from Flensburg to Gunning, Schleswig, opened for travel.  
Providence, Hartford & Fishkill R. R. opened to Hartford.  
Providence, Warren & Bristol R. R. opened for travel.  
Apr. 30. The first railroad in Brazil opened for travel.  
1855. The first train passed over the Panama R. R.  
1856. May 1. Destructive fire at the Harlem R. R. Depot, New York.  
June 16. Grand Trunk R. R., Canada, opened from Toronto to Guelph, 87 miles.  
1857. June 30. The Trent Valley R. R. opened.  
May. Opening of the Memphis & Charleston R. R. celebrated at Memphis.  
1858. Oct. 9. The first overland mail from San Francisco reached St. Louis—24 days, 13½ hours.  
Nov. 11. Formal opening of the Detroit & Milwaukee R. R.  
1859. Sept. 16. Riot on the Erie R. R. near Bergen Tunnel—two days.  
Nov. 24. First train of cars passed over the Victoria Bridge, Montreal.  
Nov. 29. Gov. Wise takes possession of the Winchester & Potomac R. R., prior to the execution of John Brown.  
Feb. 22. Formal opening of the Hannibal & St. Joseph R. R.  
Oct. 12. Death of Robert Stephenson, aged 56 years.

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IN MEMORY OF

J. E. ALGER,  
3 Mount Vernon St.,  
Reading, Massachusetts,  
Who Died March 23rd, 1925.

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